summary of knowledge. The topics less relevant to my daily clinical practice were stimulating and undoubtedly increased my knowledge of the overall management of injury in the young. One thing that surprised me was the scant attention to pre-hospital care and paramedics, because they undoubtedly play a major part (for better or worse) in the prognosis of patients following major trauma. I personally subscribe to 'scoop-and-run' rather than 'stay-and-play', but there are arguments in favour of both policies and the evidence could have been usefully presented in this book.

In summary, I enjoyed this book tremendously. Despite the inevitable opinion of my children that I am 'sad', I shall be taking it on holiday to browse through a second time. It can be dipped into for pleasure or read from cover to cover. Either way, it is an excellent read.

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Medieval Medicine in Illuminated Manuscripts

Peter Murray Jones
111 pp Price £20 ISBN 0-7123-0657-9
London: British Library, 1998

Rarely more than a few months pass by without another fat and glossy illustrated history of medicine hitting the bookstalls. It is sometimes hard to imagine how the market can sustain yet another such volume. When Murray Jones's study of medieval medical illuminations first appeared in 1984 things were very different. The innovative combination of a clear, accessible text and carefully chosen illustrations, from manuscripts largely (but not exclusively) in the British Library, ensured that the book soon sold out. In its considerably enlarged and more colourful format, the second edition of this handsome and authoritative study still leads the field. It will enjoy pride of place on the shelves of any reader with an interest, amateur or academic, in the history of medicine and the art it has inspired. The elegant coffee-table format does full justice to the jewel-like quality of the finer illuminations, which include some striking new material (such, for example, as a picture of the wounded Hannibal, in fashionable fifteenth-century dress, being treated on the battlefield by his surgeon, or row upon row of cautery patients, placidly awaiting the impact of smoking metal).

But this is no mere collection of beautiful plates depicting quaint or curious practices from a time before 'real' medicine began. On the contrary, one of the most impressive and valuable aspects of Murray Jones's book is his ability to present the iconography in its historical context, explaining how and why the images reproduced in these pages often bear no more resemblance to the human body than a map of the London underground does to the topography of the metropolis. In doing so he reflects the range and variety of medieval therapy—from astrology to herbalism and phlebotomy to dietetics—as well as the strong decorative tradition inherited from the classical past. It is especially interesting to compare the exquisite pages of custom-made copies of texts produced for wealthy patrons (in an age when anyone with a sound education knew about medicine) with the rougher pen-and-ink sketches made for or by working practitioners. The main emphasis of this book is on surgery and Galenic medicine, with much less attention to the religious aspects of healing. Since this was also an age when Christ was conventionally depicted as a physician (*Christus Medicus*) and the health of the soul ranked far above that of the body, one might have expected more imagery of this kind. And what of satire? Readers will be entertained by the fourteenth-century depiction of Reynard the Fox as a crafty empiric taking his patient's pulse: a monkey physician extorting his fee or scrutinizing a urine sample would have provided another useful reflection of popular attitudes to the medical profession, as four-legged practitioners proliferated in the margins of medieval manuscripts. But these are for the third edition, which will surely follow soon. Final congratulations must go to the Anglo–Italian publishers for producing such an attractive volume which brings a seemingly distant period in the history of medicine vibrantly to life.

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William Harvey and the Use of Purpose in the Scientific Revolution: Cosmos by Chance or Universe by Design?

Emerson Thomas McMullen
253 pp Price US$36.50 paperback; US$57.00 cloth
ISBN 0-7618-0958-9 and 0-7618-0957-0
Lanham, MD: University Press of America

Dr McMullen's account of the life and times of Harvey brings out the importance of the idea of purpose in the great physician's approach to physiological problems. A main theme of the book is indeed the idea of purpose in the minds of the men responsible for the Scientific Revolution, which he assigns to the period from 1543 (the year of the publication of both of *The Revolution of the Celestial Spheres* by Copernicus and *The Fabric of the Human Body* by Vesalius) to the death of Newton in 1727.

The idea of purpose as a basis of cosmology can be traced back to early Greek philosophers. Plato (427–348 BC) said the world was made by a creator or artificer; it was an imperfect world as we perceive it by the senses, but there was also a world of unchanging entities. Real

knowledge could not be obtained through the senses, but only from the unchanging entities by man's immortal soul. Aristotle (384–322 BC) also believed in design and he attached importance to final causes—the end or purposes to which a process is directed. He was strongly opposed to Democritus, an earlier philosopher who thought mechanistically in terms of the interaction of atoms and in whose philosophy final causes played no part. Nevertheless, Aristotle in contrast to Plato advocated the study of individual everyday things in gaining knowledge of the world. Plato's philosophy was at first the more influential in Christian Europe, but after Aristotle's views had been reconciled with the Christian faith by St Thomas Aquinas (1225–74 AD) they became an important influence in cosmology and in science generally. Thus at the time of the Scientific Revolution, ideas about design came not only from religion but also from Aristotle. In medicine there was the additional influence of Galen who states frequently in his writings that 'Nature does nothing in vain'. Harvey certainly had great respect for the views of both Aristotle and Galen. Galen like Aristotle insisted on the importance of the senses, on observation, and it can be argued that this aspect of their doctrines was as important to Harvey as their belief in purpose.

Much has been written on the ideas leading Harvey to his discovery of the circulation of the blood. The historian Walter Pagel (*William Harvey's Biological Ideas*, Karger, 1967) has emphasized the great influence of Aristotle so that Harvey is concerned with purpose in the interpretation of his observations and, moreover, in his work *De Generatione Animalium* he expresses vitalistic ideas. Gweneth Whitteridge, however, concentrates on Harvey's observations and experiments, which she interprets in terms of the hypothetico-deductive method (*William Harvey and the Circulation of the Blood*, Macdonald, 1971). Andrew Wear (*Hist Sci* 1983; **21**: 230–4) for the most part agrees with Whitteridge in emphasizing observation and experiment, but instead of the influence of the hypothetico-deductive method he considers the 'traditional way of the anatomists', mentioned by Harvey in his *Second Disquisition to Riolan*, as the basis of Harvey's methods. McMullen considers that Harvey's 'world view' is that of a purposeful universe and that in his work he sought the mysteries of God's design. This may well be true, but I doubt whether it provides the main motivation in Harvey's scientific work. Though there is evidence in Harvey's writings that he is concerned with purpose there is also criticism of those who demand statements about final causes, especially in the *Second Disquisition to Riolan*. McMullen's book is certainly most interesting, but in comparing his conclusions on the aims and methods of Harvey with those of Andrew Wear I find the latter more convincing. McMullen also introduces the ideas of Thomas Kuhn into the discussion on the Scientific Revolution. Although he shares the notion of anomalies he is on the whole unable to accept Kuhn's main explanation of scientific change. In his Preface he states that an implication of modern physics is that we live in a purposeful universe. This claim has often been made but frequently challenged—most effectively in an essay by the philosopher Ernest Nagel (*Teleology Revisited and Other Essays in the Philosophy of Science*, Columbia University Press, 1979).

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The Diagnosis and Treatment of Pituitary Insufficiency

Ed S W J Lamberts
296 pp Price £29.95 ISBN 1-90197800-1
Bristol: Bioscientifica, 1997

The pituitary gland is often described as the conductor of the endocrine orchestra, because of its fundamental importance in regulation of other important endocrine glands. When pituitary insufficiency develops (the most common reason being a pituitary tumour or its treatment) patients are treated by replacement of thyroxine, cortisol and gonadal steroids; if there is a defect in the supply of antidiuretic hormone this is also replaced, usually with the synthetic analogue desmopressin rather than arginine vasopressin itself. Until about twenty years ago, vasopressin substitution was the only form of treatment for pituitary insufficiency in which the pituitary hormone itself was given rather than its downstream metabolic product. The first attempts to administer anterior pituitary hormones as therapeutic agents came with the realization that gonadotropin-releasing hormone (GnRH) is secreted in pulsatile fashion, with pulses occurring about every ninety minutes. A triumph of applied endocrine physiology was the demonstration that pulsatile administration of GnRH to a woman with hypothalamic infertility can generate normal activity in the ovary and, indeed, allow the woman to become pregnant.

The Cinderella in all of this has, until recently, been somatotropin or growth hormone (GH); most endocrinologists assumed that growth in childhood and adolescence was the sole and entire role of GH and that there was no need to consider GH replacement in adults with pituitary insufficiency. However, healthy normal adults continue to secrete GH and do so in pulsatile fashion at night. Nature is nothing if not economical, so why do somatotropes in the pituitary continue to function in adults? Why do they not